UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,914	03/19/2004	Sigang Qiu	42P12965C	8356

8791   7590   06/12/2007
BLAKELY SOKOLOFF TAYLOR & ZAFMAN
1279 OAKMEAD PARKWAY
SUNNYVALE, CA 94085-4040

EXAMINER
BOCURE, TESFALDET

ART UNIT	PAPER NUMBER
2611	

MAIL DATE	DELIVERY MODE
06/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03/19/04 and amendment of 7/23/04*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *27-42* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *27-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 27-42 are pending in the application. Claims 1-26 are cancelled by the

amendment received on 7/23/04.

Information Disclosure Statement

2.   The Examiner has approved the Information Disclosure Statement (IDS) received

on March 19, 2004 and the initialed copy (two pages) of the IDS is attached with this

correspondence.

Double Patenting

3.   The nonstatutory double patenting rejection is based on a judicially created
doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the
unjustified or improper timewise extension of the "right to exclude" granted by a patent
and to prevent possible harassment by multiple assignees. A nonstatutory
obviousness-type double patenting rejection is appropriate where the conflicting claims
are not identical, but at least one examined application claim is not patentably distinct
from the reference claim(s) because the examined application claim is either anticipated
by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140
F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29
USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.
1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422
F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163
USPQ 644 (CCPA 1969).
        A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d)
may be used to overcome an actual or provisional rejection based on a nonstatutory
double patenting ground provided the conflicting application or patent either is shown to
be commonly owned with this application, or claims an invention made as a result of
activities undertaken within the scope of a joint research agreement.
        Effective January 1, 1994, a registered attorney or agent of record may sign a
terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with
37 CFR 3.73(b).

4.   Claims 27-42 are rejected on the ground of nonstatutory double patenting over

claims 1-26 of U. S. Patent No. 6,721,363 since the claims, if allowed, would improperly

extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the

patent and is covered by the patent since the patent and the application are claiming

common subject matter, as follows: the claimed subject matter in the instant application

differs from that of the US patent number 6,721,363 as shown from the comparison

below.

Furthermore, there is no apparent reason why applicant was prevented from

presenting claims corresponding to those of the instant application during prosecution of

the application, which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158

USPQ 210 (CCPA 1968). See also MPEP § 804.

Current Application Serial number 10/804,914	Parent US patent number 6,721,363
27. (New) A method comprising: receiving the linear output of a network CODEC, the linear output being converted from *coded data* transmitted by a network server modem, the linear data comprising a plurality of data points in a predetermined number of slots; averaging the linear data value for each digital code for each of the time slots to generate estimated real non-linear constellation points; converting the estimated real non-linear constellation points using a first converting algorithm to map the estimated real non-	1. A method for generating multiple unique real non-linear constellations each representing different time slots corresponding to a set of network CODEC linear output levels for each *digital PCM code* from the server modem, *said method comprising: receiving, in an analog modem*, the linear output of a network CODEC converted from PCM coded data transmitted by a network server modem, the linear data comprising a number of data points in a predetermined number of slots; averaging, in the analog modem, the linear data, for each digital PCM code, for

linear constellation points to network CODEC linear output levels; matching each mapped CODEC linear output level to the closest of a plurality of ideal CODEC output levels for a selected type of network CODEC; and mapping the closest ideal CODEC output levels back to real non-linear constellation points. 28. (New) The method of claim 27, wherein the linear output of a network CODEC is received by an analog modem. 30. (New) The method of claim 27, wherein the linear output of the network CODEC is converted from PCM (pulse code modulation) data.	each of the time slots, to generate a statistical estimate of the linear data corresponding to the real non-linear constellation points to produce estimated real non-linear constellation points, converting, using a first converting algorithm, to map the estimated real non-linear constellation points to the network CODEC linear output levels, matching, in the analog modem, for selecting closest ideal CODEC output levels for a selected type of network CODEC, and converting, using an inverse of the first converting algorithm, to re-map the closest ideal CODEC output levels back to real non-linear constellation points.
31. (New) The method of claim 27, wherein the pre-selected frame size comprises one of 6 slots, 12 slots, or 24 slots.	2. The method of claim 1, wherein the pre-selected frame size comprises one of 6 slots, 12 slots, or 24 slots.
32. (New) The method of claim 27, wherein the first converting algorithm comprises: detecting digital PAD attenuation; and multiplying each linear data value by an estimated digital PAD attenuation to map the linear data values to CODEC output values.	3. The method of claim 1, wherein the converting algorithm comprises: detecting digital PAD attenuation, and multiplying the linear values by an estimated digital PAD attenuation for mapping to CODEC output values.
33. (New) The method of claim 32, further comprising: detecting inter-modulation distortion, and if inter-modulation distortion is detected, applying an additional level dependent multiplication to the linear data values.	5. The method of claim 3, further comprising: detecting inter-modulation distortion, and applying an additional level dependent multiplication to the linear values for mapping to CODEC output if inter-modulation distortion is detected.
34. (New) The method of claim 32,	12. The method of claim 3, wherein a

wherein a failure in PAD detection is treated as a 0 dB PAD and raw averaged data is used as the real non-linear constellation points.	failure in PAD detection in said detecting is treated as a 0 dB PAD and raw averaged data is used as the real non-linear constellation points.
35. (New) The method of claim 32, wherein if CODEC detection fails, raw averaged data is used as the constellation points.	13. The method of claim 4, wherein if CODEC detection fails, the raw averaged data is used as the constellation points.
36. (New) The method of claim 27, wherein matching each mapped CODEC linear output level comprises: detecting the type of the network CODEC; and slicing the converted linear values to ideal CODEC output values.	4. The method of claim 1, wherein the matching algorithm comprises: detecting the type of the network CODEC, and slicing the converted linear values to ideal CODEC output values.
37. (New) The method of claim 27, wherein averaging the linear data values further comprises: grouping similar robbed bit signaling slots, and averaging constellation points of the similar robbed bit signaling slots to reduce the number of real non-linear constellations.	6. The method of claim 1, wherein averaging further comprises: grouping similar Robbed Bit Signaling slots, and averaging constellation points of the similar Robbed Bit Signaling slots, thus reducing the number of real non-linear constellations.
38. (New) The method of claim 37, wherein averaging the linear data values further comprises: averaging only non-robbed bit signaling slots.	7. The method of claim 6, wherein averaging comprises: averaging only for Non-Robbed Bit Signaling slots.
39. (New) The method of claim 27, wherein linear data output of the network CODEC is according to output levels of one of: a G711 A-law CODEC; a 711 p-law CODEC; or a D4 channel bank CODEC.	8. The method of claim 4, wherein linear data output of the network CODEC is according to one of G711 A-law CODEC output levels, G711 A-law CODEC output levels, or output levels corresponding to D4 channel bank CODECs specified in AT&T Technical Reference, PUB 43801,

	November 1982.
40. (New) The method of claim 27, further comprising: limiting the largest constellation point to a level supported by hardware before saturation.	9. The method of claim 1, further comprising: limiting the largest constellation point to a level supported by hardware before saturation.
41. (New) The method of claim 27, further comprising: calculating and inserting ideal values that correspond to missing codes into the constellations when low level codes are not signaled due to statistical requirements and when line noise is small enough to support the low level codes.	10. The method of claim 1, further comprising: calculating and inserting ideal values that correspond to missing PCM codes into the constellations when low level PCM codes are not signaled due to statistical requirements and when the line noise is small enough to support such low PCM codes.
42. (New) The method of claim 27, further comprising: eliminating constellation points that are non-monotonic.	11. The method of claim 1, further comprising: eliminating constellation points which are non-monotonic _due to presence of heavy impairments or a non-standard network CODEC_.

5.   The claimed invention in the current (instant application) differs from that of the

parent application serial number 09/579,529, now US patent number 6,721,363 (363'

hereinafter) in that the received signal has been claimed as 'PCM coded data' in the

363' patent while coded data in claim 27 and the coded data being 'PCM' data in the

dependent claims 28 and 30 in the instant application. In other word, the independent

claim 1 of the 363' is equivalent to claims 27,28 and 30 of the instant application.

The analysis of the claimed subject matter in claims 27-42 of the instant application also applies the same comparison to those of claims 14-26 of the patent 363'.

As to the claimed wherein mapping the closest ideal CODEC output levels back to real non-linear constellation points uses an inverse of the first converting algorithm in claim 29, it is obvious that the conversion from linear-to-non linear and vise-versa has to use an inverse function, i.e., it has to use an inverse function of the that linear conversion when converting from linear to non-linear and vise-versa, and Examiner is taking an official notice.

Therefore, it would have been obvious to one of an ordinary skill in the art to use an inverse function of one function used to convert a signal when converting back the signal to its original form at the time the invention was made.

Conclusion

6.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tesfaldet Bocure whose telephone number is (571) 272-3015. The examiner can normally be reached on Mon-Thur (7:30a-5:00p) & Mon.-Fri (7:30a-5:00p).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayanti (Jay) Patel can be reached on (571) 272-2988. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.
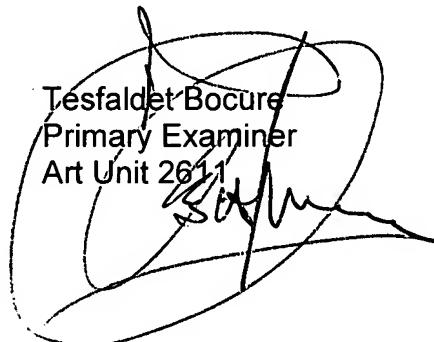
Tesfaldet Bocure
Primary Examiner
Art Unit 2611

T.Bocure